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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SHINGLETON, MICHAEL B	
ART UNIT	PAPER NUMBER
2815	

MAIL DATE	DELIVERY MODE
10/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/743,003	KENINGTON, PETER B.	
	Examiner	Art Unit	
	Michael B. Shingleton	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 11-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 11, 13-16, 21 and 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6-27-2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

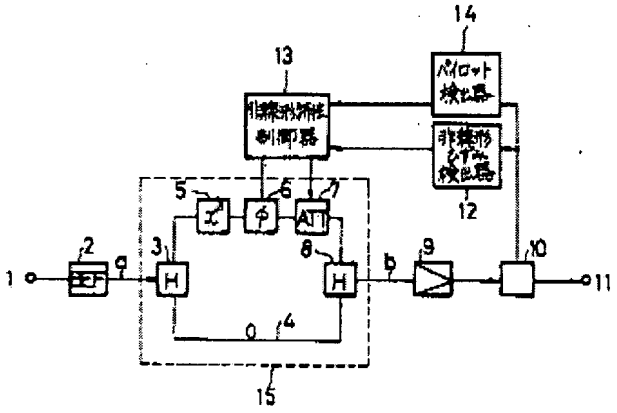
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

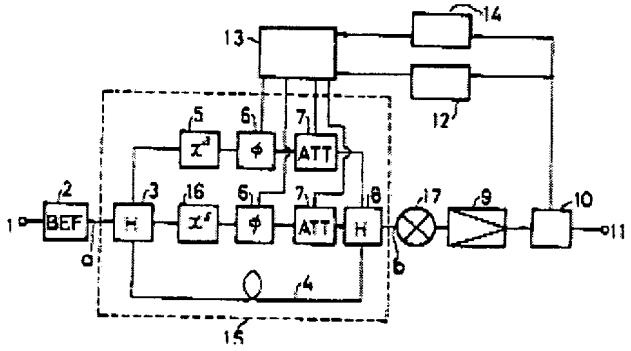
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 11, 13-16, 21 and 24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nojima et al. JP356085909A (Nojima).

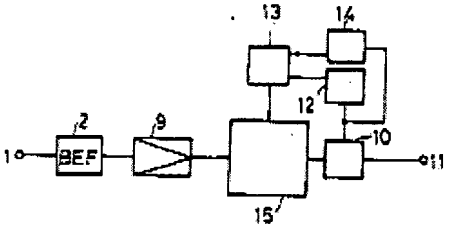
第 1 図



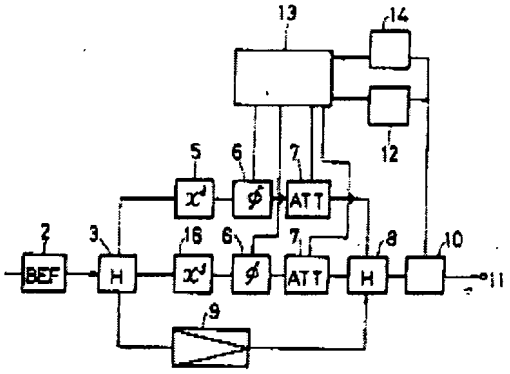
第 4 図



第 5 図



第 6 図

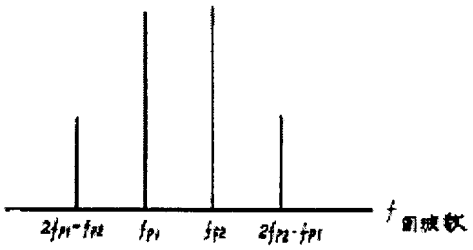


Figures 1, 4, 5 and 6 and the relevant text of Nojima all disclose a predistorter arrangement which is for "linearising" (Applicant's spelling for representing the ideal of "making linear".). Nojima clearly detects the presence of specific orders of distortion derived from the pilot signal so as to produce an error correction signal that is for controlling the processing of the input signal in the predistorter means. The examiner will specifically refer in the following to the element numbers in Figure 4, but applicant should be aware that the other Figures of Nojima would meet the claimed invention, as it is readily apparent that the same analysis will apply to these other Figures mentioned above.

Element 15 of Nojima forms a predistortion means that takes an input signal at terminal 1 and adds at least one pilot signal via element 2. The "distorting element" is an amplifier 9 in Nojima. Elements 12, 13 and 14 form an error correction means that as noted above detects in combination with the element 10 the presence of specific orders of distortion derived from the pilot signal so as to produce an error correction signal that is for controlling the processing of the input signal in the predistorter means.

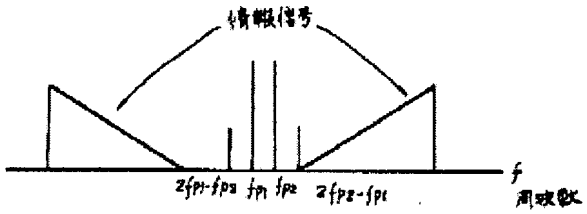
There is inherent cross-modulation of the input signal on the pilot and there is intermodulation of the pilot signal as is shown at least in part by Figures 2 and 3 of Nojima. Thus the error correction means with element 10 detects or is adapted to detect the presence of distortion signals derived from cross-modulation of the input signal on the pilot signal and detects the presence of distortion signals derived from intermodulation of the pilot signal. There is no specific definition of cross modulation and all that applicant shows is frequency bands around the pilot signal(s) what as shown below is what the prior art discloses. Note that claims that contain this language or similar language are very broad in scope. Just because something inherently detects these things does not mean that any thing is done with these things. All that is required by many of the claims is that these things are detected, not that anything occurs after the detection of these things.

第 2 図



第 3 図

11



The path denoted by element 4 can be read as the input signal path that does receive the input signal that is required to be processed by the amplifier 9 (distorting element). The path that includes elements 5-7 forms a distortion path "in which an input signal from the input signal path is processed to generate a distortion signal" and this distortion signal is combined with the input signal via element 8 to produce the predistorted input signal to the amplifier 9 (distorting element).

Note the phase and amplitude adjusters 6 and 7 of Nojima.

With respect to claim 24 applicant names the circuit that includes the pilot generator means a "control circuit". The structure recited by claim 24 is present in Nojima no matter what name applicant intends to give this structure. As noted above element 2 is a pilot generator that combines the input signal with at least one pilot signal. There is an error correction means as noted above and includes at least elements 12-14. This error correction means is clearly for coupling to an output of the amplifier (distorting element) and to detect the presence of specific orders of distortion derived from the added pilot signal, and for coupling to "adjustment" circuitry. Elements like 6 and 7 are clearly "adjustment"

circuitry in the predistorter section that adjusts the predistorter in dependence on the detected distortion signals.

The structure described above inherently provides for the method steps recited in the method claims that include claim 21. As noted above but is recited here in different wording the input signal at terminal 1 is processed via elements like 5-7 to produce a predistorted input signal that is supplied to the input of the distorting element, i.e. amplifier 9. Element 2 is a pilot generator and as such a pilot signal is generated in the input signal. The error correction structures that includes elements 12-14 provide for an error correction step in which the presence of specific orders of distortion derived from the pilot signal in the distorting element 9 output is detected to produce an error correction signal that controls the step of processing the input signal.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Clesielka US 3,772,617 (Clesielka).

FIG. 1

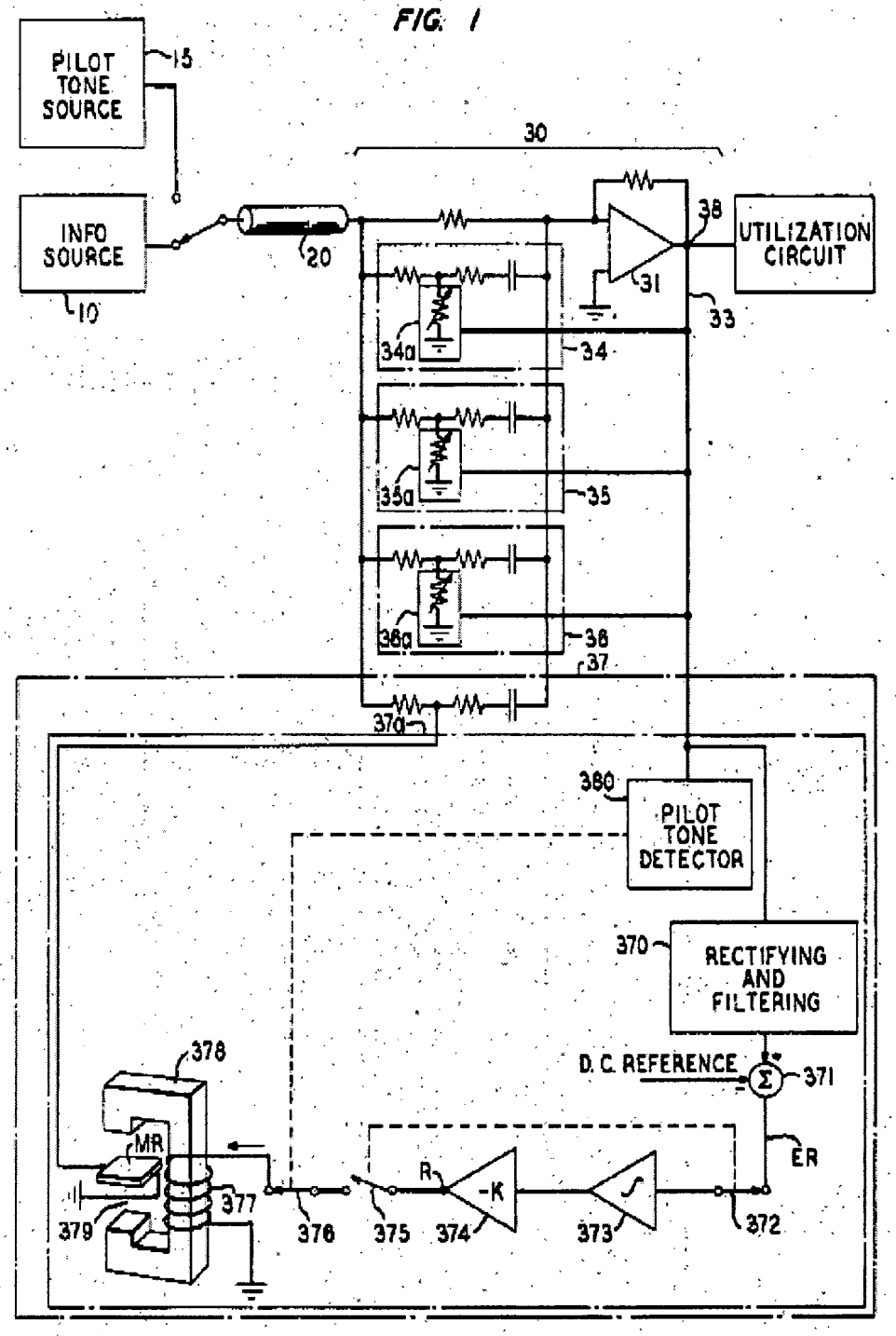

PILOT TONE SOURCE
15
INFO SOURCE
10
20
30
38
UTILIZATION CIRCUIT
31
33
34a
34
35a
35
36a
36
37
37a
380
PILOT TONE DETECTOR
370
RECTIFYING AND FILTERING
D.C. REFERENCE
371
ER
372
373
374
375
376
377
378
379
MR
R
-K

Figure 1 and the relevant text of Clesielka disclose a predictor arrangement for "linearsing" (Applicant's spelling for representing the ideal of "making linear".) a distorting element, i.e. an amplifier 31. The input signal from in the input of element 20 and this input signal is processed by the distorting element that is composed of elements like 20, 340, 350 and the like. The distorting element produces an output that is applied to the input of the amplifier 31. Applicant calls this output a predistorted input signal. Element 15 is a pilot generation means that as the name implies generates a pilot signal in the input signal to the amplifier 31. Element 37 is the error correction means that detects the presence of "specific orders of distortion derived" from the pilot signal in the output of the amplifier 31 and this error correction means produces an error correction signal via element 378 that controls the processing of the input signal in the predistortion means. Note that "specific orders of distortion" is not very specific i.e. this is very broad claim language. Applicant gives no limiting definition in the original disclosure and thus the examiner must utilize the plain meaning of the term (See MPEP 2111.01). The plain meaning of the term "specific orders" could be any orders of distortion which includes "cross-modulation" since applicant has not defined exactly what applicant means by this in the original disclosure. For example amplitudes, etc. are "specific orders of distortion". The switch just ahead of the element 20 is a means for removing the amplified pilot signal from the amplifier output signal and this means is prior to the detection of the presence of distortion signals derived from the pilot signal in the amplifier output signal via the line 33. Note that the switch removes the amplified pilot signal by removing the application of the pilot signal to the input of the amplifier all together.

Applicant's arguments filed June 14, 2007 have been fully considered but they are not persuasive.

Applicant presents further arguments directed toward that restriction requirement. The restriction requirement was made final in the previous office action dated March 15, 2007 and therefore these remarks are not timely. However, the examiner respectfully disagrees for the examiner has properly defined the species and even the claims readable thereon.

Applicant believes that the addition of new the new material to the claims never before presented i.e. the "...pilot generator adapted to generate a pilot signal in the input signal, and an error corrector adapted to detect the presence of distortion signal derived from (the) cross-modulation of the input signal on the pilot signal..." overcomes the prior art of record. (Note that original claim 10 only required that "the error correction means detects the presence of distortion signal derived from cross-modulation of the

input signal on the pilot signal" and the detection of something does not recite that something is actually done with that detection.) The examiner respectfully disagrees. The addition of "adapted to" does define specific structure. Figure 12 of the instant application shows the "cross-modulation" around the pilot signal(s) i.e. the frequencies that occur around the pilot signal. The fact is that it appears that the specification and in particular page 12 of the original specification just does not define exactly what applicant intends to mean by "cross-modulation". Thus the examiner must give the broadest reasonable interpretation to the claims. The prior art calls these frequency bands around the pilot signal "intermoduation" or "orders of distortion". One can call these items in the prior art "cross-modulation". In further support for this definition page 22 of applicant's own specification specifically refers to these frequencies band around the pilot signal as "IMD" i.e. intermodulation. From this the prior art is detecting and correcting for the same distortion as that of applicant's invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker, can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS
February 27, 2007
October 11, 2007

Michael B Shingleton
Primary Examiner
Group Art Unit 2815